DOCUMENT RESUME

ED 372 668 HE 027 552

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TITLE Mapping the University Learning Environment.
PUB DATE 4 Apr 94
NOTE 15p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April, 4-8 1994).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Black Students; *Campuses; College Environment; *College Freshmen; *Educational Environment; Higher Education; *Maps; Racial Differences; Research Universities; *Student Attitudes; Whites
IDENTIFIERS *Perceptual Mapping; *University of Maryland

ABSTRACT

The perceptual mapping technique was used to solicit University of Maryland college freshmen's perceptions of the campus environment. In perceptual mapping respondents are provided with a map of an indoor or outdoor location and their feelings or perceptions about areas on the map are solicited. During this study students participating in regular freshman orientation were given the Campus Mapping Questionnaire (CMQ) on randomly selected days. The CMQ is based on a map of the campus and an attached survey which seeks demographic information and asks students to identify locations of interest and describe their emotional perceptions of those locations. Of the 411 respondents, 73% were white while 10% were African-American. The study compared responses of African American and White groups. Results showed that African American students were much less familiar with the campus than were Whites. No African American student indicated the chapel as an area of interest. Also surprising was that the Black Cultural Center was not mentioned in any survey. Most Black students were interested in becoming familiar with a recreational facility while most White students named the Student Union. For Black students the library appeared the most comfortable location while most White students named the Student Union as the most comfortable location. (Contains 16 references.) (JB)

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ED 372 668

Mapping the University Learning Environment

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a poster session
presented at the annual meeting of the
American Educational Research Association
New Orleans, LA
April 4, 1994

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Introduction

Environmental assessment has long been a topic of professional interest. Banning (1978) termed this an "ecologic" trend and suggested the phrase "campus ecology" to denote interest in college students and their interactions with the campus environment. Campus ecology seeks to design the campus to meet the needs of its constituents, rather than to create structures through which students and others might better fit the environment (Huebner, 1989).

This interest in campus environments led to the development of several measurement instruments, among them the College and University Environment Scales (CUES; Pace, 1969), and the University Residence Environment Scales (URES; Moos & Gerst, 1974). In many instances, the environment (e.g. residence hall) of interest was identified for the student respondent and reactions to the location solicited.

While these assessments have been helpful, perceptual mapping (Sergent & Sedlacek, 1989) is an evolutionary step in campus ecology. The perceptual mapping technique, further detailed below, provides respondents with a map of an indoor or outdoor location and their feelings or perceptions about areas on the map are solicited.

Correlates of Environmental Perception

Student perceptions of their environment have been linked to a host of attributes, including satisfaction with college (Witt & Handal, 1984), student performance (Bauer, 1975), and stress

(Cohen & Wills, 1985).

Of more recent interest have been studies which focus on student race and ethnicity in an examination of campus environments. Numerous investigations have shown that majority White institutions are perceived differently by students of color (de Armas & McDavis, 1981), and sometimes as unwelcoming and hostile (Sedlacek, 1987; Fleming, 1988). As our colleges and universities become increasingly diverse, it is wise to better understand the environmental perceptions of our changed student body. The purpose of this paper is to explore the use of the perceptual mapping technique, demonstrating its use in examining campus perceptions of African-American and White students.

Perceptual Mapping Technique

As mentioned above, the perceptual mapping approach allows respondents to indicate locations of interest to them and their perceptions of those areas. The unique aspect of perceptual mapping is that respondents use actual maps of interior or exterior spaces and project feelings and perceptions on the map. While there are many environments in which the technique might be used, the present study reports on its use at a university campus.

In the first phase of the technique reported here, students were asked to indicate the areas with which they were most familiar, the areas they intended to use, and where they were most comfortable. General campus perceptions were also obtained. In the second phase, students described how they felt about the

identified location by using 20 semantic differential paired adjectives (Osgood, Suci, & Tannenbaum, 1957). These adjectives included such pairs as "friendly-hostile", "warm-cold", and "pleasant-unpleasant".

Investigation

During the regular freshman orientation program, students were given the Campus Mapping Questionnaire (CMQ) on randomly selected days. More than 90% of all new freshmen attend orientation and 100% participation was achieved on the days selected. The CMQ consisted of a map of the campus and an attached survey which sought demographic information and student-identified locations. These locations included the (1) building or area [location] with which the student most wanted to become familiar, (2) the location the student believed he or she would use most, (3) the location with which the student was most comfortable at the present, and (4) the student's current perception of the entire campus.

Students first indicated which location corresponded to each of the four descriptions. For each of the four locations, students were presented with twenty paired adjectives with which to describe the location. The adjectives were the same for all four locations. On a five point Likert scale for each adjective pair, students indicated the degree to which each location could be described on a bipolar continuum. Adjective pairs included friendly-hostile, ugly-beautiful, and meaningless-meaningful. After the surveys were completed, location responses were coded

as (1) library, (2) student union, (3) recreation and leisure, (4) administrative, (5) classroom, (6) counseling center, (7) chapel, (8) living areas, (9) open areas, or (0) other.

Results

Of the 411 respondents, 73% were White, 10% were African-American, 14% were Asian American, 1.2% were Hispanic, and 1.7% were members of other racial and ethnic groups. The responses of African-American and White students were the focus of further analysis.

Previous visits

Chi-square analyses showed significant differences in number of visits to campus by White and African-American students (x^2 = 9.95, df = 4, p = .04) when evaluated at the .05 level. Most African-American respondents (73%) had visited the campus from one to five times, including the present visit. Only three African-American students (8%) had visited the campus more than 20 times. Sixty-three percent of White respondents had visited from one to five times, with another 17% having visited from between 6 to ten times. Twelve percent of the White respondents had visited more than 20 times.

While White students had a chance to clarify their perception of the campus through multiple visits, African-American students were less likely to have had this opportunity. Thus, for African-American students especially those matriculating from a predominantly African-American environment, this predominantly White institution might still have had an aura

of unfamiliarity. White students might easily have felt more comfortable with the university environment than African-American students; it was predominantly White and they had been there many times.

Familiar locations

When asked with which building or area they would most like to become familiar, the greatest percentage, 40%, of the African-American students named a recreational area while 38% of the White students named the student union. Chi square analysis of these two location choices by race (African-American and White) showed non-significant differences in the degree to which African-American and White students chose one location over the other ($x^2 = 1.75$, $df = 1$, $p = .18$).

Most used locations

The largest percentage (26%) of White students named the student union as the location they would use the most. African-Americans named both the student union (23%) and classrooms (23%). Chi square analysis showed no significant differences in the degree to which African-American and White students chose the student union or classroom as the place they anticipated using most ($x^2 = .007$, $df = 1$, $p = .93$). In research conducted by Webster and Sedlacek (1982), 14% of their respondents spent most of their time between classes in the student union. Of these, a greater proportion of African-American undergraduates (21%) spent time between classes in the union than did White undergraduates.

Comfortable locations

African-American students named the library as the area that was the most comfortable for them (48%), with the classroom the next most comfortable (20%). For White students, the student union was their most comfortable location (30%) with the classroom as the next most comfortable location (21%). Chi square analysis showed no significant differences in these choices ($x^2 = 2.38$, df = 2, p = .30).

Data display techniques

Since perceptual mapping as a technique relies on a visual presentation of the environment under study, it is appropriate that display of the resultant data also use a more visual presentation medium.

The advent of graphics software packages, particularly for microcomputer usage, offers a rich array of possibilities. Such displays can assist researchers in making their findings more immediately palatable to an audience with an applied orientation. Figures One and Two were created using the Microsoft EXCEL "radar" figure, produced on transparencies for presentation. The figures show student answers to the question asking them to name their most comfortable place.

The response of African-American and White students who named classroom areas as their most comfortable are compared. Each of the three axes represents a semantic-differential item, (1) friendly-hostile, (2) warm-cold, and (3) pleasant-unpleasant.

In this particular example, no significant differences were

found in African-American and White responses (t-test on friendly-hostile yielded $t = -1.11$, $df = 68$, $p = .27$; t-test on warm-cold: $t = -.30$, $df = 68$, $p = .76$; t-test on pleasant-unpleasant: $t = -.46$, $df = 68$, $p = .65$. All results were evaluated at .05, divided by 3 as a Bonferroni correction). Thus the figures are for example only, rather than to show systematic perceptual differences. In the diagrams, African-American students found the classroom to be more friendly, warm, and pleasant than did White students, but, again, not to significant levels. Superimposing one transparency over the other shows this difference and would be readily apparent to an audience of practitioners.

Discussion

Perceptual mapping, used with new students, identified areas of interest and initial perceptions. These perceptions, and subsequent reality, may have important ramifications for retention of African-American students at predominantly White institutions.

For new African-American students, the campus is one which is less familiar than it is for White students. This lower familiarity may have important relationships to retention, where comfortability is strongly related to persistence.

A predominantly-White campus concerned with the degree to which students of color find a campus attractive might examine the results of perceptual mapping. In the study reported above, it is curious that no African-American student indicated the

chapel as an area with which she or he wished to become familiar. In view of the importance of spiritual values in African-American culture (McEwen, Roper, Bryant, & Langa, 1989), the absence of a religious contact or reference point on campus is one of several potentially alienating factors. Astin (1973) and Lea, Sedlacek, and Stewart (1979) showed the value of having a contact point in retention.

Also noteworthy for its absence was the Black Cultural Center on campus. This center, located within one of the dining hall buildings, was not discernably mentioned in any survey. Campus administrators in orientation and admissions may wish to include these and other important contact points in their work with African-American students.

Perceptual mapping can be used in a wide variety of environments in addition to the university campus. Additional applications might include surveying the perceptions of building employees in a corporate setting when deciding where to locate a new facility. If the facility were designed to stimulate interaction, it might be located in an area already perceived as welcoming to those it might serve. In another application, customer service areas could be surveyed not only for the efficiency of services rendered but for the perception created for those who are served.

In the university setting, perceptual mapping can provide a way to evaluate a campus through the eyes of students. Communicating the results of such evaluations to administrators

who can effect change in the environment is of paramount importance. Visual techniques appropriate to the investigation may be helpful in making research results more consumer-friendly. As we seek better ways of serving our diverse student clientele, a clearer understanding of the perception of our services and locations will inform our efforts.

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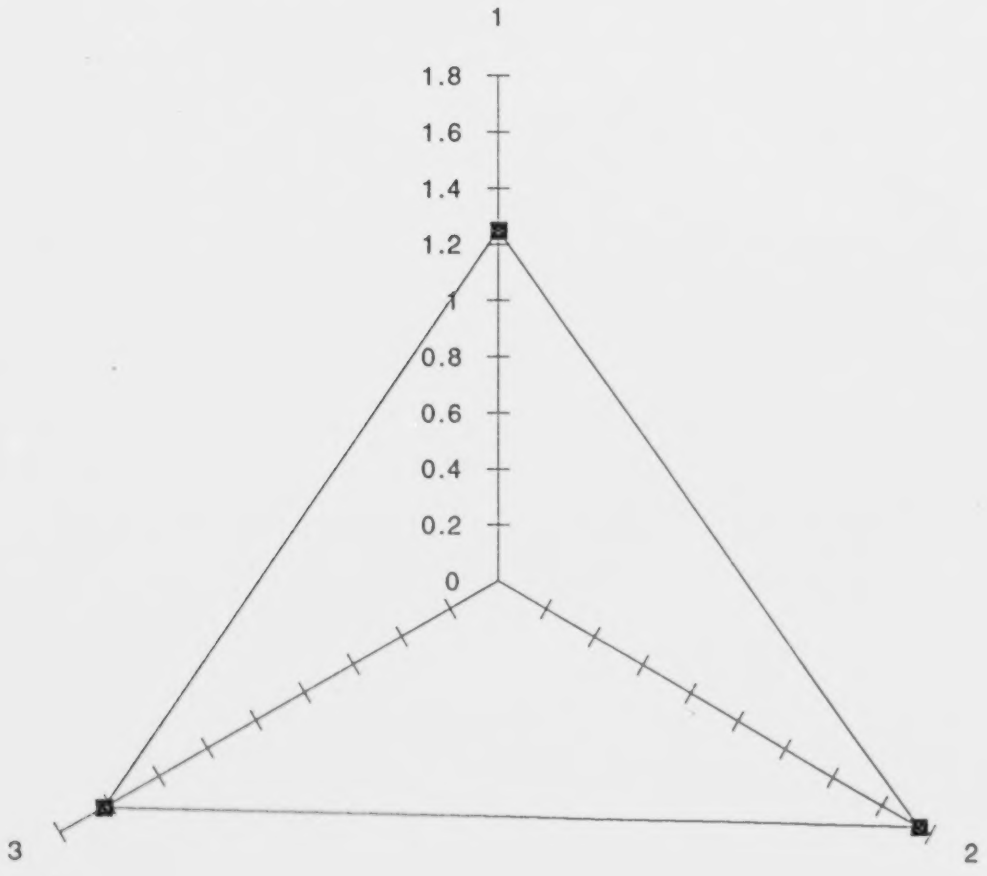
Figure One

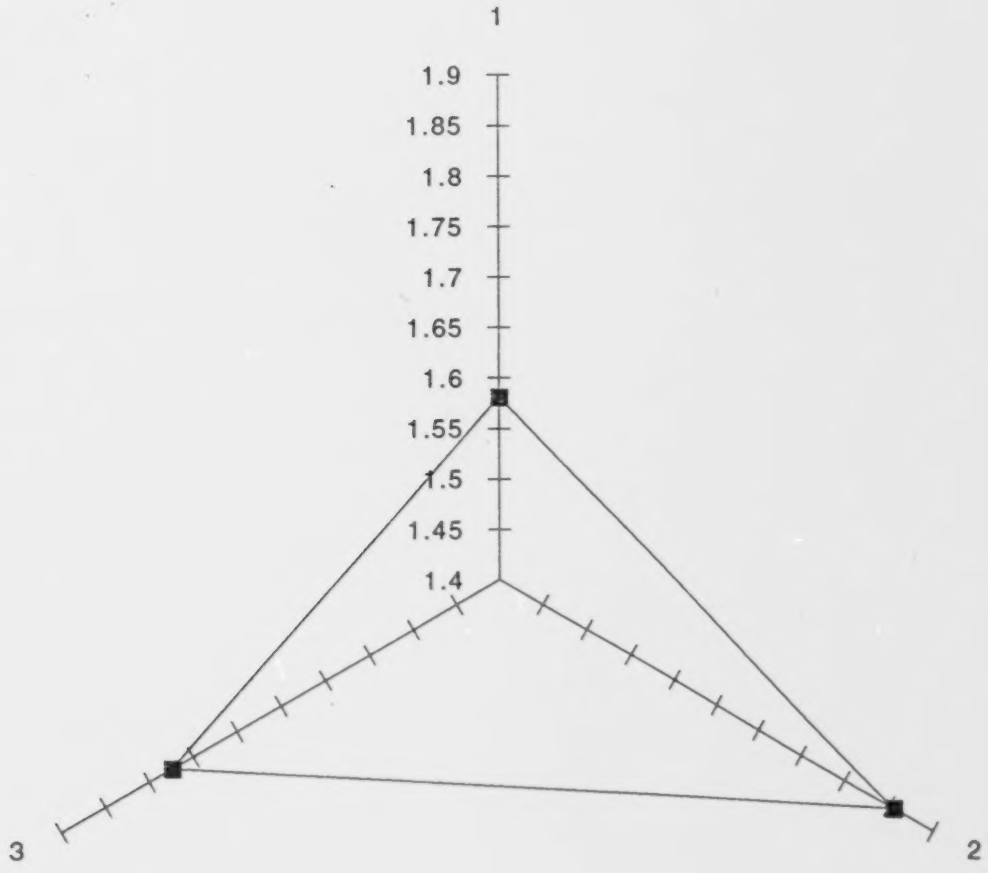
Most comfortable place: classroom (African American students)



boxed points would be printed in color for use in overhead transparencies

Figure Two

Most comfortable place: classroom (White students)



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